Arizona Influenza Pandemic Response Plan
Supplement 1: Surveillance and Epidemiology

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I. RATIONALE

Pandemic influenza surveillance includes surveillance for influenza viruses (laboratory surveillance) and surveillance for influenza-associated illness and deaths (disease surveillance).

The goals of laboratory surveillance for pandemic influenza are to:

- Rapidly detect the introduction and early cases of a pandemic influenza virus in the United States, and the specific introduction into Arizona.
- Track the virus' introduction into local areas.
- Monitor changes in the pandemic virus, including development of antiviral resistance.

The goals of disease surveillance are to:

- Serve as an early warning system to detect increases in influenza-like illness (ILI) in the community.
- Monitor the pandemic's impact on health (e.g., by tracking outpatient visits, hospitalizations, and deaths).
- Track trends in influenza disease activity and identify populations that are severely affected.

Surveillance data can help decision-makers identify effective control strategies and re-evaluate recommended priority groups for vaccination and antiviral therapy. Data from surveillance can also facilitate efforts to mathematically model disease spread during a pandemic. The existing methods of influenza surveillance provide a framework to detect and monitor pandemic influenza.

II. OVERVIEW

This supplement provides a summary of influenza surveillance activities conducted during normal influenza seasons as well as proposed enhancements to surveillance that would be implemented in the event of a pandemic. While primary investigations of influenza are conducted by local health departments, the Arizona Department of Health Services' Infectious Disease Epidemiology Section coordinates human influenza surveillance throughout the state.

Veterinary surveillance is conducted through the Arizona Veterinary Diagnostic Laboratory (AzVDL) in coordination with the Arizona Department of Agriculture and the U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Veterinary Services (VS) Program. These agencies work together to conduct influenza surveillance in domestic animals. USDA also monitors wild avian populations for highly pathogenic avian influenza (HPAI) and other diseases of concern through the APHIS Wildlife Services program. Veterinary surveillance is discussed in greater detail in Appendix 8: Avian Influenza Surveillance.

III. WORLD HEALTH ORGANIZATION (WHO) PANDEMIC PHASES

The World Health Organization (WHO) has developed a global influenza preparedness plan, which defines phases of a pandemic, outlines the role of WHO, and makes recommendations for national measures before and during a pandemic. The WHO phases are used in this document to divide response actions by phases of pandemic activity. WHO pandemic phases are:

1. Interpandemic period (routine influenza surveillance)
   Phase 1: No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk of human infection or disease is considered to be low.
   Phase 2: No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk of human disease.
2. Pandemic alert period
   Phase 3: Human infection(s) with a new subtype but no human-to-human spread, or at most rare instances of spread to a close contact.
   Phase 4: Small cluster(s) with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans.
   Phase 5: Larger cluster(s) but human-to-human spread still localized, suggesting that the virus is becoming increasingly better adapted to humans but may not yet be fully transmissible (substantial pandemic risk).
3. Pandemic period
   Phase 6: Pandemic: increased and sustained transmission in general population.

IV. ROUTINE (INTERPANDEMIC) INFLUENZA SURVEILLANCE (WHO phases 1 and 2)

ADHS maintains and coordinates a statewide influenza surveillance system that identifies circulating influenza viruses and monitors influenza activity. While the majority of influenza surveillance is conducted October through May each year, recent enhancements to influenza surveillance include performing virologic testing and gathering influenza-like illness reporting from selected sites year round. The state surveillance system is comprised of the following components:

- Influenza-like illness sentinel provider network
- Positive laboratory reports for influenza from laboratories throughout the state
- Subtyping data for selected influenza isolates
- Influenza-associated mortality data from county/state vital records offices
- Influenza-associated pediatric mortality
- Data from county health department influenza surveillance activities, including school and selected worksite absenteeism rates

These components provide data that results in an overall state-level assessment of influenza activity. Components are described in greater detail in Appendix 1: Components of the Arizona Influenza Surveillance System.

A. Laboratory Surveillance for Influenza

Public health goals for surveillance of influenza viruses are twofold: to identify and characterize circulating strains to inform annual vaccine formulation, and to identify and characterize strains with pandemic potential.

The Arizona State Public Health Laboratory (ASL) provides testing of influenza specimens submitted by providers throughout the state year-round. The ASL performs preliminary typing, forwards isolates with unusual results to CDC for identification of novel viruses, and provides specimens routinely to CDC for antigenic characterization. The ASL has the capacity for polymerase chain reaction (PCR) testing for identification of influenza A H1, H3, H5, and H7, and will expand testing capacity as information, protocols, and reagents are provided by the CDC.

In preparation for a pandemic, the ASL will be responsible for coordinating the detection of the pandemic strain by testing and forwarding specimens to the CDC laboratory, as appropriate. Recommendations for testing patients during a pandemic will likely come from the CDC, and patients for whom testing is recommended would likely be a subset of all patients with suspected influenza.

The ASL provides influenza specimen collection kits to county health departments and tests specimens that are submitted. Upon request, the county health department may provide collection kits to health care providers and facilitate transport of the specimens to the State Laboratory for testing and subtyping. Clinical and reference laboratories may also send a select number of isolates for subtyping.

IDES receives ASL information through the state laboratory's electronic laboratory database (LITS). The information sharing procedures between IDES, ASL and clinical laboratories will change with implementation of the Department's Medical Electronic Disease Surveillance Intelligence System (MEDSIS) http://www.azdhs.gov/phs/edc/edrp/es/electronicdiseasesurveillanceprogram.htm, Electronic Laboratory Reporting (ELR), and Laboratory Information Management System (LIMS). The implementation of the new systems will facilitate rapid, accurate, electronic sharing of information and improved data management. During 2006, the largest commercial laboratories in Arizona and the ASL will be transmitting laboratory information electronically to MEDSIS. State and county health departments will be able to monitor positive tests and cultures in near realtime.

The ASL is part of a national system of U.S.-based collaborating laboratories of the World Health Organization (WHO) Global Influenza Surveillance Network and the National Respiratory and Enteric Virus Surveillance System (NREVSS) (see Supplement 2 – Laboratory Diagnostics). The aim of the network of WHO and NREVSS laboratories is to monitor influenza trends and compare seasonal differences, rather than to record all influenza tests performed in the United States. These laboratories provide information to describe influenza surveillance on a national level. The ASL and one other Arizona clinical laboratory report regularly to the NREVSS.

All positive influenza tests have been reportable to ADHS by laboratories since October 2004, including influenza cultures, DFA/IFAs, PCR, and rapid tests. This component of the state surveillance system provides useful information on the burden of confirmed influenza each week (disease surveillance) and also helps to determine the type of influenza circulating. This system is discussed in more detail in the Disease Surveillance section below.

B. Disease Surveillance for Influenza

Disease surveillance provides valuable information on the burden of disease in a community and seasonal trends. Data on outpatient visits for ILI, hospitalizations, and deaths allow public health to monitor regional disease trends. As mentioned previously, influenza surveillance has traditionally been conducted from October through May, though in recent years various components of influenza surveillance have been expanded to year-round. This enhancement is an important part of surveillance for novel strains of influenza.

Nationally, four different types of disease surveillance are used to describe influenza activity: outpatient surveillance (Sentinel Provider Network), hospital surveillance [Emerging Infections Program (EIP) influenza project and New Vaccine Surveillance Network (NVSN)], mortality surveillance [122 Cities Mortality Reporting System and National Notifiable Disease Surveillance System (NNDSS)], and weekly state-level assessments of influenza activity. These components are described in greater detail in Appendix 2: Components of the National Influenza Surveillance System.

The statewide influenza disease surveillance system is coordinated and maintained through the ADHS Infectious Disease Epidemiology Section. The Arizona surveillance system is similar to the national surveillance system and reports data to the national system. The system's components are:

- Influenza-like illness sentinel provider network
- Positive laboratory reports for influenza from laboratories throughout the state
- Subtyping data for selected influenza isolates
- Influenza-associated mortality data from county/state vital records offices
- Influenza-associated pediatric mortality
- Data from county health department influenza surveillance activities, including school and selected worksite absenteeism rates

These components are described in further detail in Appendix 1: Components of the Arizona Influenza Surveillance System**.** Each week, these components are all considered when assessing the statewide influenza activity, which is submitted to CDC and communicated to local partners. Activity is characterized as "widespread", "regional", "local", "sporadic" or "no activity".

Disease surveillance activities can be divided into the following six categories: Outpatient (ILI) Surveillance, Hospitalization Surveillance, Mortality Surveillance, Laboratory Surveillance, Syndromic Surveillance, and Surveillance Communications. Below are influenza activities, by category, conducted during a normal influenza season:

Outpatient (ILI) Surveillance

- Recruiting influenza-like illness (ILI) sentinel reporting sites (county health departments or the providers report to the U.S. Influenza Sentinel Provider Surveillance System via internet or fax; ADHS accesses this information online)
    - At least one regularly reporting surveillance site per 250,000 persons population is recommended, or at least one site for smaller counties.
    - 61 sites were enrolled for the 2005-2006 season, from 12 counties.
- Ensuring ILI sentinel reporting sites are reporting to the state surveillance system on a regular basis
- Collecting county health department-level influenza surveillance information (cases and/or ILI outbreaks) from schools, long-term care facilities, or other institutions. Some counties also monitor school absenteeism regularly throughout the influenza season.
- Collaborating with local health departments to respond to special situations and follow CDC requests (e.g. investigation of pediatric influenza-associated deaths).

Hospitalization Surveillance

- Conducting informal calls to major hospitals and hospital laboratories throughout the state, as needed, or in conjunction with the local health departments
- Working with local health departments to monitor activity levels or unusual events from infection control practitioners, infectious disease doctors, medical examiners or other relevant groups, as warranted by the influenza season.

Mortality Surveillance

- Ensuring receipt of data regarding influenza-associated mortality from county and ADHS vital records offices, analyzing data
- Ensuring that IDES is receiving reports of influenza-associated pediatric morbidity from local health departments

Laboratory Surveillance

- Promoting testing of suspect influenza patients at ILI sentinel reporting sites
    - Sentinel providers may send selected specimens for testing at no charge for shipping or testing.
    - Additional kits are sent to providers upon specimen receipt.
- Contacting local health departments on a monthly basis to assess influenza specimen collection kit needs; ensuring that kits are sent in a timely manner.
- Ensuring that ASL is producing adequate influenza testing media and preparing sufficient influenza testing kits for the influenza season.
- Ensuring reporting of positive influenza results by laboratories.
- Entering and analyzing laboratory data.

Syndromic Surveillance

Currently, the syndromic surveillance systems are not fully validated as reliable sources of information regarding the identification and tracking of an outbreak. The sources listed below are monitored and will continue to be assessed in the context of other information available during interpandemic influenza seasons.

- BioSense: A CDC system that includes ICD-9-coded outpatient visits at DOD ambulatory-care centers and Department of Veterans Affairs outpatient clinics and private clinical laboratory test requests. http://www.cdc.gov/phin/component-initiatives/biosense/index.html
- Realtime Outbreak Detection System's National Retail Data Monitor (NRDM): A system coordinated by the University of Pittsburgh used to monitors sales of over-the-counter (OTC) healthcare products of enrolled pharmacies in order to identify disease outbreaks as early as possible. http://rods.health.pitt.edu/NRDM.htm
- Some county health departments also work with their local hospitals to conduct syndromic surveillance within the emergency departments.

Surveillance Communications

- Monitoring of national and/or global influenza activity through CDC reports or conference calls.
- Conducting weekly conference calls with all local health departments to discuss influenza activity and associated issues in their jurisdictions.
- Posting weekly influenza activity reports on the departmental website throughout the influenza season, at http://www.azdhs.gov/phs/oids/epi/flu/index.htm.
- Distributing communications from ADHS, CDC and WHO to partners via HAN and EpiAZ (weekly outbreak newsletter) to public health and health care practitioners across the state.
- Distributing other information to internal and external partners as needed.

As mentioned above, the development of the Department's Medical Electronic Disease Surveillance Intelligence System (MEDSIS) and the integration of the Electronic Laboratory Reporting (ELR) component will enhance surveillance practices and capacity in several ways. Laboratories using the ELR will be able to provide more timely data, including certain clinical laboratories that are be able to transmit laboratory data automatically from their systems. More information about MEDSIS and ELR can be found in Supplement 12 – Informatics.

V. PANDEMIC PREPAREDNESS SURVEILLANCE PLANNING

CDC recommends that pandemic surveillance enhancements be developed during the Interpandemic and Pandemic Alert Periods (WHO Phases 1-5) so that baseline data for interpreting information gathered during the pandemic will be available and staff will have experience and familiarity with new methodologies. ADHS is currently working on improvements to existing influenza surveillance infrastructure.

A. Outpatient (ILI) Surveillance

As mentioned previously, ADHS provides weekly assessments of the overall level of influenza activity during the influenza season (categories are: no activity, sporadic, local, regional, widespread) in the state. These assessments are used to compare the extent of influenza activity from state to state, and are the only state-level influenza surveillance data that CDC makes publicly available during the regular (interpandemic) influenza season. The state influenza activity assessments are used to generate the influenza activity map (see

www.cdc.gov/flu/weekly/usmap.htm). During a pandemic, CDC will recommend that these assessments be made year-round, rather than only October through May.

CDC is exploring options for enhancing or supplementing ILI outpatient surveillance at the national, regional, and state levels, given that healthcare providers might not be able to report ILI in a timely manner when overwhelmed with patients during an emergency. Existing electronic data sources that might increase the geographic completeness, frequency of reporting, and sustainability of ILI data are being considered and include: 1) the BioSense http://www.cdc.gov/phin/component-initiatives/biosense/index.html, and 2) existing emergency department "chief complaint" monitoring systems used by several states. CDC is also working with state and local partners to evaluate expanding and enhancing the Sentinel Provider Network.

As development of MEDSIS continues, additional components will be added that may be relevant for influenza surveillance. Future enhancements may incorporate outpatient, hospitalization, or syndromic surveillance components such as reporting of hospitalized influenza cases, hospital emergency department data such as chief complaint or discharge summary, or hospital admissions for influenza. MEDSIS or its platform (the Secure Integrated Response Electronic Notification (SIREN) system) may also contain the flexibility to quickly accommodate other electronic surveillance needs at various pandemic phases. See Supplement 12 – Informatics for more details on these systems.

ADHS is working to implement the following enhancements to influenza surveillance in preparation for a pandemic:

- Recruiting additional regularly-reporting sentinel sites for year-round ILI surveillance
- Ensuring adequate representation and consistent reporting of ILI from sentinel sites. (County health departments are responsible for helping to recruit sites and follow-up with non-reporting sites)
- Developing a protocol for investigating institutional outbreaks and working with local health departments to implement this protocol. Investigations would include information on epidemiology, vaccination history of cases and staff, and specimen collection

B. Laboratory Surveillance

Please refer to Supplement 2 – Laboratory Diagnostics, for state plans to enhance laboratory-testing capacity in the event of a pandemic.

Nationally, CDC is currently working with state and local partners to evaluate the utility and feasibility of reporting patient-level data (including zip code and/or county of residence) through an electronic mechanism other than the Public Health Laboratory Information System (PHLIS). Such a system would allow daily (rather than weekly) reporting during a pandemic and analysis of virus spread at the county or health district level. During a pandemic—as the burden of disease increases and state and local health departments face multiple, competing demands—it might be necessary to adjust surveillance strategies and reassess the need for frequent (or daily) reporting.

ADHS is working to implement the following enhancements related to influenza virologic surveillance in preparation for a pandemic:

- Exploring options for increasing specimen collection from sentinel sites, outbreaks, unusual cases, and geographical areas not currently represented in specimens received.
- Developing sampling scheme for laboratory surveillance during pandemic.
- Assessing ability to transport specimens to the state laboratory quickly; exploring the feasibility and need for courier service or other transport options.
- ADHS is implementing electronic laboratory reporting integrated within MEDSIS (Arizona's NEDSS) from the two largest commercial clinical laboratories in the state. These two commercial laboratories contribute over 80% of positive laboratory reports in Arizona. Other large volume hospital laboratories will also be targeted for electronic transmission of laboratory result data. A web entry form will be available for low volume laboratories to report to ELR/MEDSIS.
- The State Public Health Laboratory is implementing a new laboratory information system (StarLIMS) that will transmit result data to MEDSIS automatically.

C. Hospitalization Surveillance

In Arizona, current hospitalization surveillance is limited to data provided by the Hospital Discharge Database, which is not timely enough for early detection of pandemic flu but may help with longer term monitoring of the impact of a pandemic in Arizona. Active hospital surveillance may be implemented in conjunction with county health departments for hospitalizations or emergency department visits.

At the national level, surveillance for hospitalizations associated with influenza is limited to the collection of data on pediatric hospitalizations in 12 large metropolitan areas (Emerging Infections Program (EIP) influenza project). In January 2006, the EIP influenza project will be expanded to include laboratory-confirmed influenza-associated hospitalizations of adults as well as children. The ADHS Office of Border Health is working with CDC to implement this pediatric hospitalization surveillance protocol in Tucson hospitals, but Arizona is otherwise not included in this program.

CDC is exploring options for expanding hospitalization surveillance to obtain data from all age groups in all parts of the country and obtaining more detailed information from a small number of sites. Options under review include working with the Council of State and Territorial Epidemiologists (CSTE) to make laboratory-confirmed influenza-associated hospitalizations nationally notifiable; obtaining timely hospital discharge data to estimate the number of influenza-associated hospitalizations across the country; adding a hospitalization surveillance component to BioSense(http://www.cdc.gov/phin/component-initiatives/biosense/index.html); developing protocols for active population-based hospitalization surveillance, and developing protocols for reporting the number of influenza-associated hospitalizations. Please refer to the national plan at www.pandemicflu.gov for further detail on national enhancements to influenza surveillance.

ADHS is working to implement the following enhancements to influenza hospitalization surveillance in preparation for a pandemic:

- Incorporating regular analysis of the ADHS Hospital Discharge Database into existing influenza surveillance

In addition, ADHS is exploring the following additional hospital-related surveillance activities:

- Drafting emergency measures to initiate reporting of hospitalized cases of influenza in the event of a pandemic.
- Creating case definitions and reporting forms for reporting hospitalized influenza cases.
- Identifying sites for active surveillance and guidelines for when to initiate active surveillance.
- Working with CDC to facilitate data provisioning to BioSense from large hospital systems to enhance influenza surveillance (such as hospital admissions data, etc.) and provide situational awareness. http://www.cdc.gov/phin/component-initiatives/biosense/index.html

D. Mortality Surveillance

The collection of mortality data can also help health departments monitor the severity of a pandemic and determine the population and areas most affected. In Arizona, mortality surveillance is accomplished through data collected by state and county vital records offices, as well as reports of pediatric deaths due to laboratory-confirmed influenza.

At a national level, timely data on influenza deaths is provided by two sources: reports of pediatric deaths due to laboratory-confirmed influenza (nationally notifiable as of October 2004), and the 122 Cities Mortality Reporting System, which provides weekly reports of the total number of death certificates that list P&I as a cause of death and the total number of death certificates filed (Table 1). Although the National Center for Health Statistics (NCHS) also collects mortality data, these data are not available until 2-3 years after each influenza season.

During a pandemic, state and local policy-makers and public health officials will likely ask health departments to provide mortality data to guide decision-making on control and response measures. To help ensure uniform data collection across jurisdictions, CDC will provide case definitions and reporting procedures. CDC is also investigating the feasibility of obtaining mortality data through the Electronic Death Registration (EDR) Project (http://www.naphsis.org/projects/index.asp?bid=374) and the validity of estimating national mortality based on data from the 122 Cities Mortality Reporting System. State-specific mortality cannot be estimated from data provided by the 122 Cities system.

ADHS is working to implement the following enhancements to influenza mortality surveillance in preparation for a pandemic:

- Investigating methods to obtain timely influenza mortality data from county and/or state vital statistics; establish routine surveillance to identify influenza-associated deaths
- Establishing forms and algorithms to monitor influenza in the event of a pandemic.
- Incorporating regular analysis of the ADHS Vital Statistics' Death Database into existing

influenza surveillance
- Estimating Arizona morbidity and mortality resulting from potential flu pandemics using Flu-Surge. http://www.cdc.gov/flu/flusurge.htm

E. Syndromic Surveillance

Because syndromic surveillance is a relatively new area, these systems are still under development and validation of these methods is needed to reduce false signals and increase sensitivity.

ADHS is working to implement the following enhancements to surveillance for influenza-like illness in preparation for a pandemic:
- Incorporate the use of nontraditional surveillance sources (e.g. over-the-counter pharmaceutical sales, BioSense) into routine surveillance. http://www.cdc.gov/phin/component-initiatives/biosense/index.html
- As the capacity for electronic transfer of data improves at both public health and hospitals, additional capabilities for receiving hospital data may be incorporated into MEDSIS.
- ADHS is working with the Real-time Outbreak Detection System's National Retail Drug Monitoring System in recruitment of additional retailers of OTC medication to increase coverage of rural areas in the State. http://rods.health.pitt.edu/NRDM.htm.
- ADHS is working with the Arizona School Nurse Consortium and the Department's Child Health Indicator Program to develop weekly reports of school nurse visits including ILI that will be uploaded from 300 schools in Arizona.

F. Surveillance Communications

ADHS is working to implement the following enhancements to influenza surveillance communications in preparation for a pandemic:
- Establishing and maintaining contacts with influenza and immunization coordinators in neighboring states
- Increasing the reach of the Arizona Health Alert Network into the health care provider community
- Providing regular updates of influenza activity in *Immunications*, *Prevention Bulletin*, The Arizona Partnership for Immunizations (TAPI) Newsletter, and other regular communication venues

VI. PANDEMIC SURVEILLANCE (WHO PHASES 3-6)

A. Pandemic Alert Surveillance for Novel Strains of Influenza (WHO Phases 3-5)

1. Monitoring for novel strains of influenza

During the Pandemic Alert Period, ADHS will provide CDC's enhanced surveillance recommendations for identification of patients at increased risk for infection with a novel virus to providers, laboratories, county health departments, and other partners. Novel influenza strains

include avian influenza viruses that can infect humans, other animal influenza viruses (such as swine influenza viruses) that can infect humans, or new or re-emergent human influenza strains that cause cases or clusters of human disease. The specific recommendations will depend on the epidemiology of the virus and the clinical characteristics of the human cases as they are known at the time, and will most likely focus on severely ill, hospitalized, or ambulatory patients who meet certain epidemiologic and clinical criteria. (For example, since February 2004, CDC has recommended enhanced surveillance to identify patients potentially infected with avian influenza A (H5N1). The current recommendations are summarized in Appendix 4: Interim Recommendations: Enhanced US Surveillance and Diagnostic Evaluation to Identify Cases of Human Infection with Avian Influenza A (H5N1).

Local Health Departments, in conjunction with ADHS, are responsible for investigating initial reports of potential human influenza infections due to a novel influenza strain in the state. Once a novel strain detected abroad exhibits sustained human-to-human transmission (WHO Phase 6), recommendations for further intensified laboratory and disease surveillance will likely be issued.

2. Reporting novel strains of influenza

County health departments should immediately inform ADHS of any suspected human infection with an avian/animal/novel human strain of influenza. Clinical algorithms for managing patients with possible novel influenza infection are provided in Appendix 4: Interim Recommendations: Enhanced US Surveillance and Diagnostic Evaluation to Identify Cases of Human Infection with Avian Influenza A (H5N1).

ADHS would immediately report to CDC any influenza cases that:

- Test positive for a novel influenza subtype, *or*
- Meet the enhanced surveillance case definition in effect at that time, *and*
- Cannot be subtyped in the state public health laboratory because appropriate reagents or biocontainment equipment is not available (see Supplement 2 – Laboratory Diagnostics).

ADHS would call the CDC 24- hour Emergency Response Hotline (770-488-7100) to report a suspected case of infection with avian influenza A (H5N1) or any other novel influenza virus. Following the initial telephone report, ADHS Epidemiology staff and/or county health department staff should conduct case interviews using a CDC case screening and report form and monitor contacts of all suspected cases. Per CDC, the completed form should be faxed to CDC at 888-232-1322 with a cover sheet that says: "ATTN: Influenza case reporting." (The case screening and report form used to report suspected cases of human infection with influenza A (H5N1) is provided in Appendix 5: CDC Human Influenza A (H5) Case Screening and Report Form .) If infection with a novel influenza virus is confirmed, ADHS may request CDC assistance with a case investigation to identify the source of infection and determine the course of illness.

Specific surveillance activities during the Pandemic Alert phase include the following:

a. Phase 3: Human infection(s) with a new subtype but no human-to-human spread, or at most rare instances of spread to a close contact.

Activities:
Interpandemic surveillance operations will continue, and the following will be implemented (if not already occurring):

Outpatient (ILI) Surveillance

- Request that providers screen patients with influenza or ILI for specific epidemiological factors related to the new subtype (e.g. travel to affected areas)
- Work with local health departments to ensure timely and comprehensive reporting of ILI from sentinel sites.
- Monitor surveillance reports and communications from CDC and WHO and enact recommendations.
- Notify ILI surveillance partners to be prepared to send reports

Laboratory Surveillance

- Ensure that representative and unusual viral isolates are sent to CDC for appropriate testing
- Ensure that any influenza A viruses that cannot be subtyped are reported to CDC immediately and isolates are sent as appropriate.
- Ensure timely reporting of influenza from laboratories.
- Ensure data entry and analysis of reports of influenza cases

Syndromic Surveillance

- Monitor syndromic surveillance data sources, including local health department data, Biosense, and RODS, to detect unusual patterns of ILI activity.
- Increased syndromic surveillance activity will be monitored and evaluated by local health departments.

Surveillance Communications

- Maintain regular internal communication between State Laboratory and IDES regarding epidemiological and laboratory surveillance.
- Distribute epidemiologic reports of influenza activity updates to surveillance partners and stakeholders and hold regular conference calls with county health department partners.
- Obtain CDC guidelines/statements and distribute to partners.

The local health departments' rapid response teams (RRT) will investigate suspected cases of influenza with a novel subtype, including completing investigations forms, obtaining specimens for testing, and monitoring close contacts for influenza-like illness. Upon request, the ADHS RRTs may also assist in this process.

b. Phase 4: Small cluster(s) with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans.

Activities:
Surveillance operations listed above will continue, and the following will be implemented:

Outpatient (ILI) Surveillance

- Request that sentinel providers activate ILI surveillance system, if not already operating.

- Screen travelers arriving from influenza-affected areas for ILI.
- Enhance surveillance, including obtaining demographic data on clusters, ill travelers, or unusual cases.
- Investigate any influenza cases, outbreaks, or increases in ILI.
- Consider instituting active surveillance including evaluating school and workforce absenteeism at selected sites.
- Analyze data from laboratory reporting, outbreaks, clusters, travelers, hospitals and other healthcare facilities to identify population groups at greatest risk and inform possible prioritization of vaccine or antivirals (see Supplement 6 – Vaccine Distribution and Supplement 7 – Antiviral Distribution)

Hospitalization Surveillance

- Consider instituting active surveillance. Work with county health departments to contact hospitals, emergency departments, clinics, and labs that test for influenza.
- Depending upon frequency and location of influenza activity, ADHS may consider enacting an emergency measure to make influenza-associated hospitalizations reportable to the county health departments (Appendix 6: Arizona Draft Emergency Measure for Pandemic Influenza)

Mortality Surveillance

- Consider instituting active surveillance (e.g. number of deaths due to respiratory illness among hospitalized patients; influenza-like illnesses seen by the medical examiners).

Laboratory Surveillance

- Request that surveillance partners (local health departments, sentinel providers, clinical laboratories) increase specimen collection; alert state laboratory to expect an increased number of specimens. Increase influenza laboratory testing for persons with compatible clinical syndromes at emergency departments or among hospitalized cases.
- Assess need to change types of laboratory testing performed to adhere to CDC guidance regarding safety concerns in working with the novel virus.

c. Phase 5: Larger cluster(s) but human-to-human spread still localized, suggesting that the virus is becoming increasingly better adapted to humans but may not yet be fully transmissible (substantial pandemic risk).

Activities:
Surveillance operations listed above will continue, but will likely be coordinated under the Surveillance Group in the ADHS PHIMS structure (as PHIMS will be activated). Communications and analysis of surveillance data will likely occur with greater frequency.

B. Pandemic Influenza Surveillance (WHO Phase 6)

If a pandemic is suspected, ADHS will closely monitor data from CDC regarding the first cases of a pandemic influenza virus in the United States as well as tracking disease spread. To be able to detect the first cases of the virus in Arizona, ADHS will notify local health departments and

providers in addition to increasing laboratory surveillance. More intense testing will be necessary during the early stages of a pandemic, when detecting the introduction of the virus into a state or community is the primary goal. Once the virus has been identified throughout the state, testing levels may be decreased depending on resource availability. Specific surveillance activities for this pandemic phase follow:

a. Phase 6: Pandemic: increased and sustained transmission in general population.

Activities for the early part of Phase 6: Surveillance activities described above will continue to the extent possible, in addition to the following activities:

Outpatient (ILI) Surveillance

- Continue to monitor data received, and use data to establish or reassess vaccine and anti-viral priority groups.
- Analyze morbidity and mortality data to establish population- and geographic area-specific rates.

Laboratory Surveillance

- Focus laboratory surveillance on detecting antigenic drift variants or re-assortment viruses.

Mortality Surveillance

- Medical examiner reporting of influenza-related deaths will be requested during the pandemic period under A.R.S. § 36-782 to 786 (Appendix 7: Declaration of Enhanced Surveillance Advisory).
- Mortality data will be monitored in conjunction with existing surveillance data to evaluate the range and severity of the pandemic.

Additional sources of surveillance data may be evaluated to determine the effectiveness of pandemic influenza interventions and resource allocation needs. These may include partnering with emergency preparedness staff to identify health care resource demands (e.g. number of patients on ventilators, EMT runs, etc.). In addition, surveillance programs may be asked to monitor vaccine and anti-viral effectiveness.

Activities for later in Phase 6: Scaled-back surveillance
Surveillance will likely be overwhelmed during a pandemic, and personnel will need to be diverted to higher-priority activities. While enhanced surveillance will be conducted during the introduction, initial spread, and first waves of a pandemic, over time, as more persons are exposed, the pandemic strain is likely to become a routinely circulating influenza A subtype. When that happens, the activities of both the ADHS and national influenza surveillance systems will revert to the frequency and intensity typically seen during interpandemic influenza seasons. The return to interpandemic surveillance will occur as soon as feasible, and the change will be communicated to all surveillance partners.

VII. APPENDICES

Appendix 1.
Components of the Arizona Influenza Surveillance System

TABLE 1. COMPONENTS OF THE ARIZONA INFLUENZA SURVEILLANCE SYSTEM

Source	Surveillance type	Description
ADHS State Laboratory	Virologic surveillance	The ADHS State Laboratory performs influenza culture and polymerase chain reaction (PCR) on respiratory submissions. Subtyping is performed on isolates and PCR performed at ADHS can identify influenza A H1, H3, H5 and H7 subtypes, and influenza B. Unusual or untypable specimens are forwarded to CDC for further testing.
ADHS State Laboratory Phoenix Childrens Hospital	Virologic surveillance	The State Laboratory and one other Arizona clinical laboratory are part of the National Respiratory and Enteric Virus Surveillance System (NREVSS) and report weekly to CDC the number of influenza tests performed and the number of positive results by type.
All laboratories	Virologic surveillance	All positive laboratory tests for influenza are reportable to the state health department by law. Selected specimens are forwarded from clinical labs to the State Lab for typing.
Influenza-like Illness (ILI) Sentinel Provider Network	Outpatient surveillance	Healthcare providers around the state monitor outpatient visits for ILI (fever >100°F AND sore throat and/or cough). Specimens from a small subset of patients are submitted to the State Laboratory for influenza virus testing. Approximately 60 sites are enrolled each year.
122 Cities Mortality Reporting System	Mortality surveillance	Phoenix and Tucson vital records offices transmit weekly data to CDC on the total number of death certificates filed and the number with pneumonia and/or influenza listed as a cause of death.
Influenza-associated pediatric mortality	Mortality surveillance	Reported laboratory-confirmed influenza-related deaths among children <18 years are investigated and reported to CDC.
Statewide summary report	State-level assessments	ADHS reports to CDC on a weekly basis the overall level of influenza activity as none, sporadic, local, regional, or widespread.

Appendix 2.
Components of the National Influenza Surveillance System

TABLE 1. COMPONENTS OF THE NATIONAL INFLUENZA SURVEILLANCE SYSTEM

Activity	Surveillance type	Description
U.S. collaborating laboratories of the: • WHO Global Influenza Surveillance Network • National Respiratory and Enteric Virus Surveillance System (NREVSS)	Virologic surveillance	Collaborating laboratories report weekly to CDC the number of influenza tests performed and the number of positive results by type, and in some cases, subtype and age group. If non-subtypable viruses or unusual subtypes are detected, the specimens are sent to the state public health laboratory or to CDC for further testing.
Sentinel Provider Network (SPN)	Outpatient surveillance	Approximately 2,300 healthcare providers monitor outpatient visits for ILI (fever >100°F or 37.8°C AND sore throat and/or cough in the absence of a known cause other than influenza). Specimens from a small subset of patients are submitted to state public health laboratories for influenza virus testing.
Emerging Infections Program (EIP) influenza project	Hospital surveillance	Eleven EIP sites report to CDC cases of laboratory-confirmed influenza-related hospitalizations in children aged <18 years on a bi-weekly basis.
New Vaccine Surveillance Network (NVSN) pediatric hospitalizations	Hospital surveillance	NVSN enrolls a subset of patients aged <5 years who are hospitalized with fever or respiratory symptoms. Nose and throat swabs are obtained and tested for influenza by viral culture and RT-PCR. The rate of laboratory-confirmed influenza-related hospitalizations is reported to CDC on a bi-weekly basis.
122 Cities Mortality Reporting System	Mortality surveillance	Municipal vital records offices transmit weekly data to CDC on the total number of death certificates filed and the number with pneumonia and/or influenza listed as a cause of death.
National Notifiable Disease Surveillance System (NNDSS) influenza-associated pediatric mortality	Mortality surveillance	Participating state health departments report to CDC all laboratory-confirmed influenza-related deaths among children <18 years.
State and territorial epidemiologists' reports	State-level assessments	Health departments report on a weekly basis the overall level of influenza activity as none, sporadic, local, regional, or widespread.

TABLE 2. COMPONENTS OF THE NATIONAL INFLUENZA SURVEILLANCE SYSTEM

Activity level	ILI activity*/outbreaks		Laboratory data
No activity	Low	**and**	No lab-confirmed cases†
Sporadic	Not increased	**and**	Isolated lab-confirmed cases
	or		Lab-confirmed outbreak in one institution‡
Local	Not increased		Recent (within the past 3 weeks) lab evidence of influenza in region with increased ILI
Regional (doesn't apply to states with ≤4 regions)	Increased ILI in 1 region**; ILI activity in other regions is not increased	**and**	Recent (within the past 3 weeks) lab evidence of influenza in region with the outbreaks; virus activity is no greater than sporadic in other regions
	or		
	2 or more institutional outbreaks (ILI or lab confirmed) in 1 region; ILI activity in other regions is not increased		Recent (within the past 3 weeks) lab-confirmed influenza in the affected regions
Widespread	Increased ILI in ≥2 but less than half of the regions	**and**	Recent (within the past 3 weeks) lab-confirmed influenza in the affected regions
	or		
	Institutional outbreaks (ILI or lab confirmed) in ≥2 and less than half of the regions	**and**	Recent (within the past 3 weeks) lab-confirmed influenza in the state.
	Increased ILI and/or institutional outbreaks (ILI or lab confirmed) in at least half of the regions		

* ILI activity can be assessed using a variety of data sources, including Sentinel providers, school/workplace absenteeism, and other syndromic surveillance systems that monitor influenza-like illness.

† Lab-confirmed case = case confirmed by rapid diagnostic test, antigen detection, culture, or PCR. Care should be given when relying on results of point-of-care rapid diagnostic test kits during times when influenza is not circulating widely. The sensitivity and specificity of these tests vary, and the predicative value positive may be low outside of peak influenza activity. Therefore, a state may wish to obtain laboratory confirmation of influenza by testing methods other than point-of-care rapid tests for reporting the first laboratory-confirmed case of influenza of the season.

‡ Institution = nursing home, hospital, prison, school, etc.

** Region = population under surveillance in a defined geographical subdivision of a state. A region could be comprised of one or more counties and would be based on each state's specific circumstances. Depending on the size of the state, the number of regions could range from 2 to approximately 12. The definition of regions would be left to the state, but existing state health districts could be used in many states. Allowing states to define regions would avoid somewhat arbitrary county lines and allow states to establish divisions that make sense based on geographic population clusters. Focusing on regions larger than counties would also improve the likelihood that data needed for estimating activity would be available.

Appendix 3.
Types of Influenza Surveillance

A. Virologic surveillance

- A network of ~75 WHO collaborating laboratories and ~90 NREVSS collaborating laboratories report the total number of respiratory specimens tested and the number positive for influenza by type, subtype, and age group to CDC each week. (Because ~40 of the NREVSS laboratories are also WHO laboratories, the total number in the WHO/NREVSS network is ~125.) Data from the two networks are combined and analyzed together.
- WHO collaborating laboratory network
  - All 50 state health department laboratories, 4 large county public health laboratories, a DOD reference laboratory, and ~25 tertiary-care hospital and academic center laboratories participate.
  - State and county public health laboratories subtype (i.e., A/H1 vs. A/H3) ~80% of their influenza A isolates.
  - Laboratories report the number of tests performed and results by age group to CDC's Influenza Branch.
  - Approximately 30% of laboratories report specimen-level data electronically using PHLIS, ~40% report aggregate weekly data via the Internet, and ~30% report aggregate weekly data via fax.
- NREVSS collaborating laboratory network
  - Primarily hospital laboratories
  - Most do not subtype influenza viruses, and none report age-group data
  - Laboratories report aggregate weekly numbers of tests performed and results to CDC's Respiratory and Enteric Viruses Branch (REVB) by phone or Internet.
- Laboratories test for influenza viruses by viral culture, PCR, or antigen detection.
- Most laboratories maintain the ability to test for influenza year-round.
- Data are available to state health department influenza surveillance coordinators on a password-protected website that is updated once a week during October through May and periodically throughout the summer. National and regional data are made available to all states, and state-specific data (including a laboratory-specific line list) are available to the states from which the data were reported.

B. Outpatient ILI surveillance (Sentinel Provider Network)

- Network of ~2,300 primary-care providers in all 50 states record the number of outpatients seen for any reason and the number with ILI by age group and report directly to CDC each week.
- ILI is defined as fever (>100°F or 37.8°C) AND sore throat and/or cough in the absence of a known cause other than influenza.
- All providers report from October through May, and approximately one third of the regular reporters report year-round.
- The network is a collaborative effort between CDC and state health departments.
  - State health department influenza surveillance coordinators recruit and maintain a network of providers and arrange for testing, free of charge, for a subset of specimens from providers.
  - CDC develops and maintains reporting materials and systems, serves as a data repository, and provides data feedback to the states.
- Providers collect two or three specimens from patients with ILI at the beginning, middle, and end of the season and from any unusual clinical cases, severe cases, outbreak-related cases, and patients with ILI during the summer.
- Providers report to CDC via a password-protected Internet site (75%), fax (13%), or phone (12%).

- Data are available to state health department influenza surveillance coordinators on a password-protected website. Data reported by providers on the Internet are available in real time, and data reported to CDC by fax are updated once each weekday. Regional data are available to all states, whereas state-specific data are available to the states from which the data were reported.

C. Hospitalization surveillance

- Hospitalizations associated with laboratory-confirmed influenza in children are monitored in 12 metropolitan areas through two surveillance networks that report patient-level data to CDC every 2 weeks.
  - Emerging Infections Program (EIP) influenza project. Children aged <18 years are monitored in 11 metropolitan areas from October 1 through April 30; laboratory testing is part of routine patient care. The EIP influenza project will expand to include all age groups in January 2006.
  - New Vaccine Surveillance Network (NVSN). A sample of children aged <5 years is monitored in three metropolitan areas (two are EIP influenza project sites) from October 1 through March/April; all sampled children with fever and respiratory symptoms are tested on admission.

D. Mortality surveillance

- Vital statistics offices in 122 cities covering between one-fourth and one-third of the U.S. population report weekly throughout the year the total number of death certificates filed and the number with pneumonia and/or influenza listed anywhere on the death certificate, by age group. No additional information (e.g., underlying medical condition, demographics) is available. On average, there is a 15-day lag from death to report to CDC.
- Weekly mortality data from the 122 cities are compared to a seasonal baseline calculated using a robust regression procedure run on the previous 5 years of data. If the proportion of P&I deaths for a given week exceeds the baseline value for that week by a statistically significant amount, P&I deaths are said to be above the epidemic threshold, and the proportion of deaths above threshold are considered attributable to influenza.
  - Data from all 122 cities are combined, and the percentage of all P&I deaths are calculated and compared to the expected percentage for that week.
  - Data can be analyzed by age group and geographic region, but interpretation of the data requires the development of a separate baseline for each data subset. It is not valid to compare data from a particular city or region to the national baseline.
- Detailed data (e.g., person-level data including multiple causes of death, underlying medical conditions, demographics) on ~99% of deaths in the United States are available from NCHS, but these data have a time lag of ~2-3 years.
- Pediatric deaths associated with laboratory-confirmed influenza were made nationally notifiable in October 2004. During the 2004-2005 season, the condition was reportable in 13 states; many others instituted voluntary reporting until the legal requirement was passed. CDC receives electronic, patient-level data on these deaths. The timeliness of these data cannot yet be assessed.

E. State-level influenza activity assessments

State health departments report a weekly assessment of the overall level of influenza activity (none, sporadic, local, regional, or widespread) in the state (see box below). These assessments are used to compare the extent of influenza activity from state to state and represent the only state-level influenza surveillance data that CDC makes publicly available during the interpandemic influenza season.

Appendix 4:
Interim Recommendations: Enhanced US Surveillance and Diagnostic Evaluation to Identify Cases of Human Infection with Avian Influenza A (H5N1)

NOTE: This guidance pertains to the avian influenza A (H5N1) circulating as of October 2005 CDC will provide updated guidance for avian influenza A (H5N1) or for new situations, as needed, through the Health Alert Network.

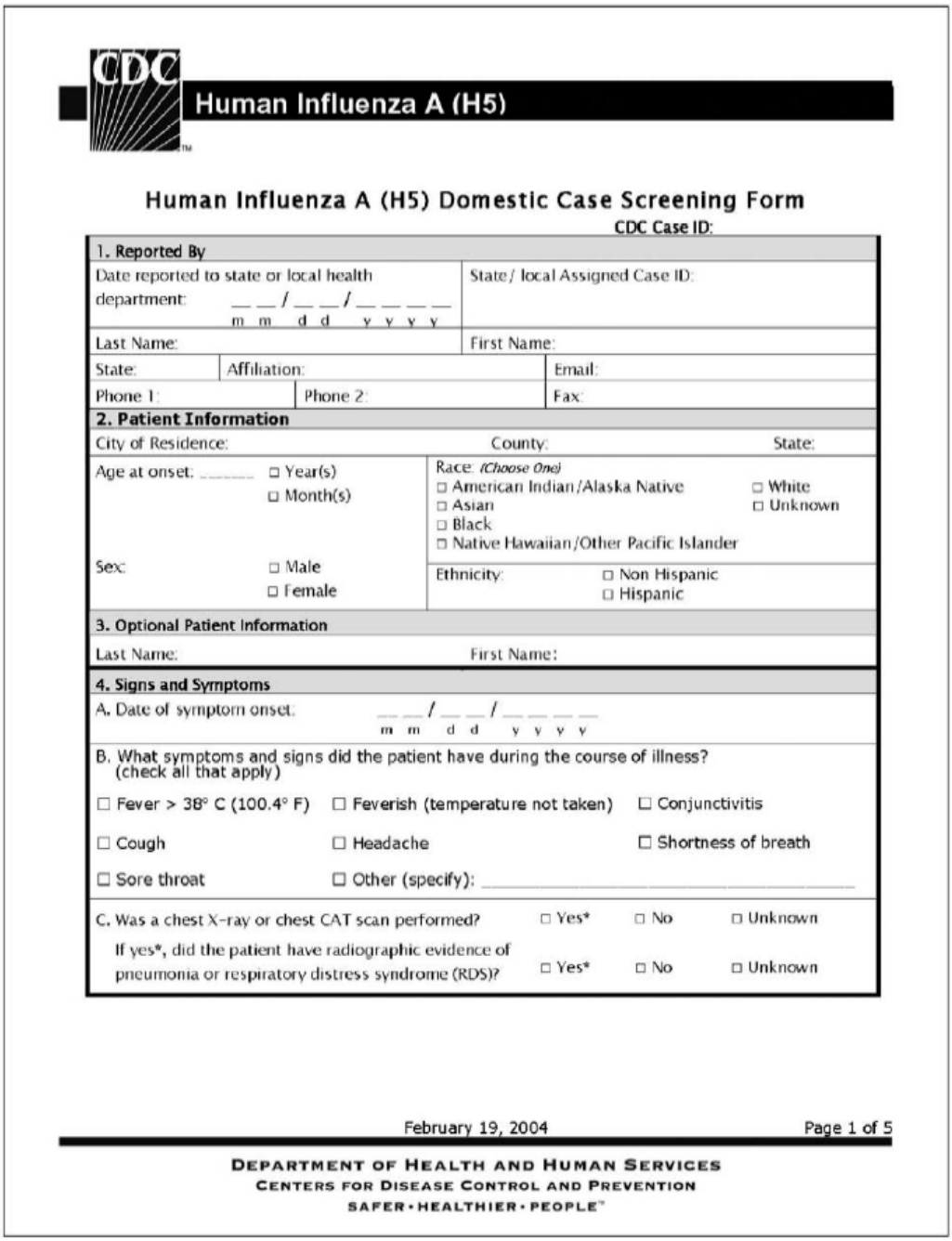
Enhanced surveillance efforts by state and local health departments, hospitals, and clinicians are needed to identify patients at increased risk for influenza A (H5N1). Interim recommendations are as follows:

- Testing for avian influenza A (H5N1) is indicated for hospitalized patients with:
  - Radiographically confirmed pneumonia, acute respiratory distress syndrome (ARDS), or other severe respiratory illness for which an alternative diagnosis has not been established, and
  - History of travel within 10 days of symptom onset to a country with documented avian influenza A (H5N1) infections in poultry and/or humans. (For a regularly updated listing of H5N1-affected countries, see the World Organization for Animal Health [OIE] website at http://www.oie.int/eng/en_index.htm and the WHO website at http://www.who.int/en/).

OR

- Testing for avian influenza A (H5N1) should be considered on a case-by-case basis in consultation with state and local health departments for hospitalized or ambulatory patients with:
  - Documented temperature of >100.4°F (>38°C); and
  - One or more of the following: cough, sore throat, or shortness of breath; and
  - History of contact with poultry (e.g., visited a poultry farm, a household raising poultry, or a bird market) or a known or suspected human case of influenza A (H5N1) in an H5N1-affected country within 10 days prior to onset of symptoms.

Appendix 5.
CDC Human Influenza A (H5) Case Screening and Report Form



Human Influenza A (H5)

Human Influenza A (H5) Domestic Case Screening Form

CDC Case ID:

1. Reported By

Date reported to state or local health department: __ __ / __ __ / __ __ __ __ (m m d d y y y y)	State / local Assigned Case ID:
Last Name:	First Name:
State: / Affiliation:	Email:
Phone 1: / Phone 2:	Fax:

2. Patient Information

City of Residence: County: State:

Age at onset: _____ ☐ Year(s) ☐ Month(s)

Sex: ☐ Male ☐ Female

Race: *(Choose One)*
☐ American Indian/Alaska Native ☐ White
☐ Asian ☐ Unknown
☐ Black
☐ Native Hawaiian/Other Pacific Islander

Ethnicity: ☐ Non Hispanic ☐ Hispanic

3. Optional Patient Information

Last Name: First Name:

4. Signs and Symptoms

A. Date of symptom onset: __ __ / __ __ / __ __ __ __ (m m d d y y y y)

B. What symptoms and signs did the patient have during the course of illness? (check all that apply)

☐ Fever > 38° C (100.4° F) ☐ Feverish (temperature not taken) ☐ Conjunctivitis
☐ Cough ☐ Headache ☐ Shortness of breath
☐ Sore throat ☐ Other (specify): _____

C. Was a chest X-ray or chest CAT scan performed? ☐ Yes* ☐ No ☐ Unknown

If yes*, did the patient have radiographic evidence of pneumonia or respiratory distress syndrome (RDS)? ☐ Yes* ☐ No ☐ Unknown

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DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION
SAFER·HEALTHIER·PEOPLE™

Influenza A (H5) Domestic Case Screening Form 1.0
(continued from previous page)

Epidemiologic Risk Factors

CDC Case ID:

5. Travel/Exposures

A. In the 10 days prior to illness onset, did the patient travel to any of the countries listed in the table below? If yes*, please fill in arrival and departure dates for all countries that apply. ☐ Yes* ☐ No** ☐ Unknown

**If patient did not travel outside U.S., skip to question 6.

Country	Arrival Date	Departure Date	Country	Arrival Date	Departure Date
☐ Afghanistan			☐ Myanmar (Burma)		
☐ Bangladesh			☐ Nepal		
☐ Brunei			☐ North Korea		
☐ Cambodia			☐ Oman		
☐ China			☐ Pakistan		
☐ Hong Kong			☐ Papua New Guinea		
☐ India			☐ Philippines		
☐ Indonesia			☐ Saudi Arabia		
☐ Iran			☐ Singapore		
☐ Iraq			☐ South Korea		
☐ Israel			☐ Syria		
☐ Japan			☐ Taiwan		
☐ Jordan			☐ Thailand		
☐ Laos			☐ Turkey		
☐ Lebanon			☐ Viet Nam		
☐ Macao			☐ Yemen		
☐ Malaysia					

For the questions 5B to 5E,
In the 10 days prior to illness onset, while in the countries listed above . . . .

B. Did the patient come within 1 meter (3 feet) of any live poultry or domesticated birds (e.g. visited a poultry farm, a household raising poultry, or a bird market)? ☐ Yes* ☐ No ☐ Unknown

If Yes*

C. Did patient touch any recently butchered poultry? ☐ Yes ☐ No ☐ Unknown

D. Did the patient visit or stay in the same household with anyone with pneumonia or severe flu-like illness? ☐ Yes ☐ No ☐ Unknown

E. Did the patient visit or stay in the same household with a suspected human influenza A(H5) case?* ☐ Yes ☐ No ☐ Unknown

F. Did the patient visit or stay in the same household with a known human influenza A(H5) case?* ☐ Yes ☐ No ☐ Unknown

** SEE Influenza A (H5): Interim U.S. Case Definitions*

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Influenza A (H5) Domestic Case Screening Form 1.0
(continued from previous page)

CDC ID:

6. Exposure for Non Travelers	
For patients whom did not travel outside the U.S., **In the 10 days prior to illness onset**, did the patient visit or stay in the same household with a traveler returning from one of the countries listed above who developed pneumonia or severe flu-like illness?	☐ Yes* ☐ No ☐ Unknown
If yes*, was the contact a confirmed or suspected H5 case patient?	☐ Yes* ☐ No ☐ Unknown
If yes*: CDC ID: _____ STATE ID: _____	

Laboratory Evaluation

7. State and local level influenza test results	
Specimen 1	
☐ NP swab ☐ Broncheoalveolar lavage specimen (BAL) ☐ NP aspirate ☐ OP swab ☐ Other _____	Date Collected: __ __ / __ __ / __ __ __ __ m m d d y y y y
Test Type: ☐ RT-PCR ☐ Direct fluorescent antibody (DFA) ☐ Viral Culture ☐ Rapid Antigen Test* *Name of Rapid Test:	Result: ☐ Influenza A ☐ Influenza B ☐ Influenza (type unk) ☐ Negative ☐ Pending
Specimen 2	
☐ NP swab ☐ Broncheoalveolar lavage specimen (BAL) ☐ NP aspirate ☐ OP swab ☐ Other _____	Date Collected: __ __ / __ __ / __ __ __ __ m m d d y y y y
Test Type: ☐ RT-PCR ☐ Direct fluorescent antibody (DFA) ☐ Viral Culture ☐ Rapid Antigen Test* *Name of Rapid Test:	Result: ☐ Influenza A ☐ Influenza B ☐ Influenza (type unk) ☐ Negative ☐ Pending
Specimen 3	
☐ NP swab ☐ Broncheoalveolar lavage specimen (BAL) ☐ NP aspirate ☐ OP swab ☐ Other _____	Date Collected: __ __ / __ __ / __ __ __ __ m m d d y y y y
Test Type: ☐ RT-PCR ☐ Direct fluorescent antibody (DFA) ☐ Viral Culture ☐ Rapid Antigen Test* *Name of Rapid Test:	Result: ☐ Influenza A ☐ Influenza B ☐ Influenza (type unk) ☐ Negative ☐ Pending

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Influenza A (H5) Domestic Case Screening Form 1.0
(continued from previous page)

CDC ID:

8. List specimens sent to the CDC

Select a SOURCE* from the following list for each specimen: Serum (acute), serum (convalescent), NP swab, NP aspirate, broncheoalveolar lavage specimen (BAL), OP swab, tracheal aspirate, or tissue

Specimen 1: ☐ Clinical Material ☐ Extracted RNA ☐ Virus Isolate	Source*: ----------	Collected : __ __ / __ __ / __ __ __ __ (m m d d y y y y) Date Sent: __ __ / __ __ / __ __ __ __ (m m d d y y y y)
Specimen 2: ☐ Clinical Material ☐ Extracted RNA ☐ Virus Isolate	Source*: ----------	Collected : __ __ / __ __ / __ __ __ __ (m m d d y y y y) Date Sent: __ __ / __ __ / __ __ __ __ (m m d d y y y y)
Specimen 3: ☐ Clinical Material ☐ Extracted RNA ☐ Virus Isolate	Source*: ----------	Collected : __ __ / __ __ / __ __ __ __ (m m d d y y y y) Date Sent: __ __ / __ __ / __ __ __ __ (m m d d y y y y)
Specimen 4: ☐ Clinical Material ☐ Extracted RNA ☐ Virus Isolate	Source*: ----------	Collected : __ __ / __ __ / __ __ __ __ (m m d d y y y y) Date Sent: __ __ / __ __ / __ __ __ __ (m m d d y y y y)
Specimen 5: ☐ Clinical Material ☐ Extracted RNA ☐ Virus Isolate	Source*: ----------	Collected : __ __ / __ __ / __ __ __ __ (m m d d y y y y) Date Sent: __ __ / __ __ / __ __ __ __ (m m d d y y y y)
Carrier:	Tracking #:	

9. Case Notes:

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Influenza A (H5) Domestic Case Screening Form 1.0
(continued from previous page)

CDC ID:

CDC Contact Information (FOR CDC USE ONLY)	
Case status and date status applied: ☐ Clinical Case (lab results pending) __ __ / __ __ / __ __ __ __ (m m d d y y y y) ☐ Influenza A pos. Case (subtype pending) __ __ / __ __ / __ __ __ __ (m m d d y y y y) ☐ Confirmed Case __ __ / __ __ / __ __ __ __ (m m d d y y y y)	☐ Ruled Out/Non-Case: __ __ / __ __ / __ __ __ __ (m m d d y y y y) Reason: ☐ Influenza A neg. (by PCR, viral culture, or influenza A serology) ☐ Non-H5 Influenza Strain ☐ Other etiology* ☐ Did not meet case definition
Date Entered by CDC: __ __ / __ __ / __ __ __ __ (m m d d y y y y)	Contact Date: __ __ / __ __ / __ __ __ __ (m m d d y y y y)
Name of CDC Contact:	

*Alternative Diagnosis			
A. Was an alternative non-influenza respiratory pathogen detected? If yes* specify:	☐ Yes*	☐ No	☐ Unknown
B. Was there a diagnosis other than respiratory infection? If yes* specify:	☐ Yes*	☐ No	☐ Unknown

February 19, 2004

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Appendix 6.
Arizona Draft Pandemic Emergency Measure

ARIZONA DEPARTMENT OF HEALTH SERVICES

ADMINISTRATIVE ORDER 200X-XX
(Emergency Measures for Pandemic Influenza)

WHEREAS, the Director of the Department of Health Services, pursuant to A.R.S. § 36-136 (G) may define and prescribe emergency measures for detecting, reporting, preventing, and controlling communicable or infectious diseases or conditions if the Director has reasonable cause to believe that a serious threat to public health and welfare exists; and

WHEREAS, there is a need to adopt control measures for pandemic influenza as an emergency measure under the authority of A.R.S. § 36-136(G), as established by the following:

1. Pandemic Influenza represents a serious threat to public health. Pandemic influenza is a recently recognized, contagious febrile respiratory illness associated with infection by a novel influenza virus known as Influenza A (H5N1). Pandemic influenza manifestations are often severe, including death, and severe illnesses often occur in previously healthy persons, including healthcare workers.
2. While Pandemic influenza can be highly contagious, its overall rate of spread is slow enough that it can often be contained with early recognition and aggressive implantation of control measures. The key to controlling pandemic influenza is prompt detection of cases and their contacts, followed by rapid implementation of control measures.
3. Effective surveillance for pandemic influenza is challenging because the early signs and symptoms of Influenza A (H5N1) are not specific enough to reliably distinguish pandemic influenza from other common respiratory illnesses. Thus, risk of exposure is key to considering the likelihood of a pandemic influenza diagnosis, and pandemic influenza surveillance efforts need to be determined by the presence of known Influenza A (H5N1) transmission in the world.
4. In February 2004, the World Health Organization adopted guidelines for the global surveillance of influenza A (H5/N1). These emergency measures are needed to implement the WHO guidelines for the detection and control of pandemic influenza.
5. The current rules for communicable diseases, in 9 A.A.C. 6 do not include provisions related to suspect cases of pandemic influenza. These emergency measures are needed to ensure the sharing of patient confidential information related to this non-reportable disease by healthcare providers, and healthcare institutions and to ensure that healthcare providers and healthcare institutions implement appropriate control measures for pandemic influenza.

NOW, THEREFORE, I Susan Gerard, by virtue of the authority vested in me as the Director of the Arizona Department of Health Services, do hereby Order the following emergency measures to be adopted for detecting, reporting, preventing, and controlling pandemic influenza in Arizona:

A. Reporting Requirements and Control Measures in the Absence of Known Person-to-Person Transmission of Pandemic Influenza Worldwide

1. A healthcare provider[1] or administrator of a healthcare institution[2] shall:
   a. Ensure that each patient hospitalized for influenza like illness is screened for the following that might indicate a higher index of suspicion of Influenza a (H5N1) infection:
   i. In the 10 days before illness onset, travel to or close contact[3] with another ill individual who recently traveled to a geographical area with known Influenza A (H5N1) activity.
   b. Immediately report to the local health agency by telephone or equally expeditious means each positive Influenza A (H5N1) test result; and
   c. Include the following information in each report made under subsection (A)(1)(b):
   i. The patient's name, address, telephone number, date of birth, race or ethnicity, gender, and occupation;

ii. The disease, date of onset, date of diagnosis, date of laboratory confirmation (if applicable) and test results; and
iii. The name, address, and telephone number of the person or agency making the report.

[1] "Healthcare provider" means a physician, physician assistant, registered nurse practitioner, or dentist.
[2] "Healthcare institution" has the same meaning as in A.R.S. § 36-401.

2. A local health agency shall:
   a. Conduct an epidemiologic investigation of each patient reported under subsection (A)(1)(b); and
   b. Forward each report received under subsection (A)(1)(b) to the Department along with the communicable disease reports forwarded each week under R9-6-203 (B), including for each report a description of what action was initiated by the local health agency.

B. Reporting Requirements and Control Measures in the Presence of Person to Person Transmission of Pandemic Influenza

1. In addition to complying with the reporting requirements and control measures described in subsection (A), a healthcare provider or administrator of a healthcare institution shall:

a. Ensure that each patient presenting to an outpatient clinic with influenza like illness is screened for the following pandemic influenza risk factors:

i. Travel within 10 days of illness onset to a foreign or domestic location with documented or suspected recent local transmission of Influenza A (H5N1) infection, or

ii. Close contact with 10 days of illness onset with an individual with known or suspected pandemic influenza;

I have executed this Order on this day

_____ , 200X
having authority to do so under Arizona Law

DIRECTOR

ON this _____ day of _____, 200X,
Susan Gerard, Director of the Arizona Department of Health Services, signed and acknowledged this document in my presence.

Appendix 7.
Declaration of Enhanced Surveillance Advisory

In Development.

Appendix 8.
Arizona Avian Influenza Surveillance Information

A. USDA and Arizona Department of Agriculture (ADA) preparedness for Avian Influenza in Poultry. The United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS) has established an interagency working group to address highly pathogenic avian influenza (HPAI) preparedness and response issues. The group includes representatives from several federal agencies and international animal- and public-health organizations.

1. Surveillance

   Currently, the Arizona Veterinary Diagnostic Laboratory (AzVDL) has the capability to conduct testing for both avian influenza (AI) and exotic Newcastle disease (END). The Arizona Department of Agriculture provides funding for necropsies on poultry at the AzVDL, when the owner cannot pay. This funding is through a cooperative agreement between ADA and USDA for surveillance for AI and END[1]. All fighting and exhibition birds that are confiscated are tested for AI and END.

   If specimens from a chicken tested positive for either of these agents at the AzVDL, specimens are required to be forwarded to the National Veterinary Services Laboratory (NVSL) for confirmation.

2. Response

   If an HPAI outbreak should occur in the United States, APHIS has the Foreign Animal Disease (FAD) management infrastructure required to conduct an emergency response program. The response would take place at the local level in accordance with the National Animal Health Emergency Management System's guidelines for highly contagious disease[2]. The Arizona Department of Agriculture (ADA) assisted in the development of the Foreign Animal Disease Incident Annex to the State Emergency Response and Recovery Plan[3]. ADA has the primary role of responsibility in the annex.

3. Protection of Outbreak Response Workers

   APHIS has collaborated with CDC to draft recommendations to help prevent the transmission of HPAI to animal-disease outbreak-response workers[4]. APHIS' Veterinary Services (VS) program is developing a policy to ensure the protection of personnel involved in HPAI control and eradication activities. Upon detection of HPAI (such as H5N1) in poultry, APHIS would quickly notify the CDC to initiate their involvement, in coordination with State and local health departments, in efforts to minimize disease transmission from birds to humans. Upon detections of a low pathogenic AI outbreak in poultry in Arizona, the ADHS may have to contact USDA and the Arizona Department of Agriculture (AzDA) to initiate public health involvement in the same efforts to minimize disease transmission from birds to humans, in consultation with the CDC.

4. Food Safety
   An outbreak in the United States could raise public health concerns about food safety. Without following proper food handling, hygiene, and normal cooking practices, HPAI (H5N1) virus can survive on contaminated raw poultry meat, on contaminated surfaces of eggs, and within the albumen and yolk of eggs. However, it is important to note that there is no evidence that people have been infected by HPAI (H5N1) through the consumption of eggs, egg products, or well-cooked poultry meat. The Word Health Organization has developed a guidance document for concerns related to food safety and avian influenza[5].

B. Surveillance for HPAI in Wild Birds

At this time, there is no enhanced surveillance for detection of avian influenza in wild birds in Arizona. Only poultry submitted to the AzVDL with symptoms and/or lesions associated with avian influenza are being tested for the disease. Examples of enhanced surveillance ongoing in Alaska include sampling of live-captured, apparently healthy wild birds to detect the presence of HPAI or antibodies to the virus. In July 2005, President Bush's Homeland Security Council's Policy and Coordination Committee (PCC) requested the USDA and DOI to organize an interagency working group with the objective of developing a plan for early detection of highly pathogenic avian influenza (HPAI) introduction into North American wild birds.

The interagency effort to detect HPAI in wild birds is being divided into two phases. The initial phase will address early detection activities in Alaska, and in particular, coastal areas that have the most potential for contact among Asian and North American birds. The second phase will address subsequent HPAI detection activities in the four major North American flyways.

The working group is currently evaluating five potential strategies for the detection of HPAI in wild birds. The working group is currently developing each of these strategies and comparing their respective advantages and disadvantages before providing their recommendation to the PCC.

References:

1) Per conversation with Dr. John Hunt, Director of Animal Services Division, Arizona Department of Agriculture: cooperative agreement with USDA for surveillance for avian influenza and exotic Newcastle disease in poultry

2) Safeguarding the United States From Highly-Pathogenic Avian Influenza (HPAI): USDA Actions, Plans, and Capabilities for Addressing the Bird Flu Threat
www.aphis.usda.gov/lpa/pubs/fsheet_faq_notice/fs_ahhpaiplan.html

3) Foreign Animal Disease Incident Annex, State Emergency Response and Recovery Plan
www.dem.state.az.us/preparedness/SERRP/Plan_Start_Index.html
Also available on SIREN, Public Health Preparedness Portal, Response Plans, ADEM plans

4) OSHA-NIOSH Issues Exchange Group document, Avian Influenza, Protecting Poultry Workers at Risk, posted on the OSHA Web site as a Safety and Health Information Bulletin on December 13, 2004.
www.osha.gov/dts/shib/shib121304.pdf

5) Highly pathogenic H5N1 avian influenza outbreaks in poultry and in humans: Food safety implications, Department of Food Safety, Zoonoses, and Foodborne Diseases, World Health Organization
www.who.int/foodsafety/micro/avian/en/index.html

Other guidelines:
The U.S. Geological Survey also has provided "Interim Guidelines for the Protection of Persons Handling Wild Birds with Reference to Highly Pathogenic Avian Influenza" at:
www.nwhc.usgs.gov/research/WHB/WHB_05_03.html